

REMARKS

The Office Action

Claims 1-36 and 38-47 are pending. Claims 1-13 and 43-46 are under consideration. Claims 1, 4-12, and 44 stand rejected for lack of enablement. Claims 1, 4-12, and 43-46 stand rejected for indefiniteness. Claims 2, 3, and 13 would be allowable if rewritten in independent form. The Office has also objected to the specification and claims 8-9.

Specification

Enclosed herewith is a copy of the abstract typed on a separate sheet as requested by the Office.

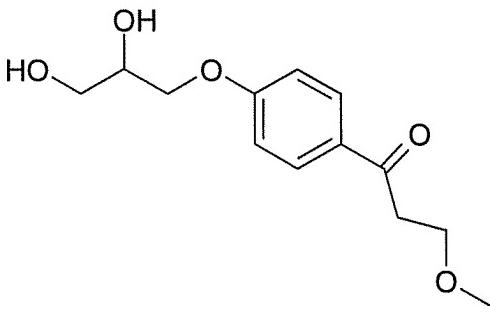
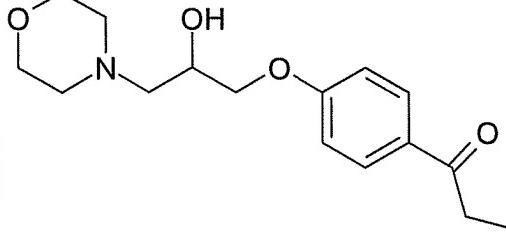
Claim Objections

Claims 8 and 9 are amended as requested by the Examiner, to recite respectively the araliphatic and aliphatic series only, whereas the other series are deleted.

Enablement

Claims 1, 4-12, and 44 stand rejected for lack of enablement. With respect to claim 1, and its dependent claims, the Office asserts that “the claim is seen to embrace compound[s] of formula (I) without any hydroxyl groups.” Applicants believe that the Office has inadvertently mischaracterized claim 1.

We respectfully disagree with the Office's position because the group R in claim 1 always includes at least one hydroxyl group, so that the compound of formula (I) always contains at least one hydroxyl group, even when the substituents R₁-R₃ do not. This feature is clearly evident from the formulae of two preferred compounds (I):

| Formula | Description |
|---|--|
|  | Compound of formula (I) wherein R is 2,3-dihydroxypropoxy, R ₁ = R ₂ are hydrogen, and R ₃ is methoxy: 4-(2,3-dihydroxypropoxy)-3-methoxypropiophenone |
|  | Compound of formula (I) wherein R is 2-hydroxy-3-morpholinopropoxy, R ₁ = R ₂ = R ₃ are hydrogen: 4'-(2-hydroxy-3-morpholinopropoxy)propiophenone |

These preferred compounds of formula (I) include one or more hydroxyl groups, which are present in the substituent R, even when no hydroxyl group is present in substituents R₁-R₃. Therefore, claim 1 recites only compounds of formula (I) bearing one or more hydroxyl groups, and the rejection should be withdrawn.

With respect to claim 44, the Office has based the rejection on recitation of “drug.”

Claim 44 is amended by replacing the generic expression “drug” objected to by the Examiner by specific classes drugs that may be added to the present ester derivatives of hyaluronic acid. In particular, the term “*drug*” is now replaced by “*an anti-inflammatory drug or a metalloprotease inhibitor or a NO-synthase inhibitor or other biologically active molecules for use in the treatment of arthrosis and/or arthritis.*” This amendment finds complete support in the originally filed specification, page 7, lines 23-26. Reference to drug combinations has also been deleted. This rejection may also be withdrawn.

Indefiniteness

Claims 1, 4-12, and 43-46 stand rejected for indefiniteness. With respect to claim 1, the Office has objected to recitation of the term “hyaluronic acid derivative.” Applicants point out that the specification provides exemplary hyaluronic acid derivatives for use in the invention on page 4, lines 3-30 and in claim 6. Applicants further assert that based on these examples, one skilled in the art would understand the metes and bounds of the term “hyaluronic acid derivative” as recited in claim 1. The Office has also rejected claim 1 essentially on the same grounds as the enablement rejection above. As discussed above, the compounds of formula (I) must always include at least one hydroxyl group. Accordingly, this rejection may be withdrawn.

With respect to claim 6, the Office has objected to various aspects of the language. Applicants first note that claim 1 is directed to an ester produced from the

reaction of a compound of formula (I) and a hyaluronic acid or derivative thereof. That is, the claimed ester derivatives include two components. The members of the Markush group recited in claim 6 are directed to one of these components, i.e., *hyaluronic acid* derivatives that would be reacted with compounds of formula (I) to form the claimed esters, and not the *ester* derivatives as assumed by the Office. Thus, reference to the absence of a C=C bond applies only to the *hyaluronic acid* derivative and not to compounds of formula (I) or the claimed esters.

With respect to the phrase “carboxylic groups not exceeding 75%/50%/20%” in claim 6, these percentages refer to the maximum amount of the specified derivitization, e.g., esterification with groups other than formula (I) and amidation, that may be present in the hyaluronic acid derivatives listed in the Markush group. For clarity, the remaining percentage does not refer to the structural core of formula (I).

The Office has further stated that recitation of “salts of N-sulphated or O-sulphated derivatives of hyaluronic acid” does not further limit claim 1. This view is incorrect as claim 1 recites the generic term hyaluronic acid derivatives but does not recite the species N-sulphated or O-sulphated hyaluronic acids derivatives. Recitation of a species in a dependent claim does further limit a generic independent claim.

The Office has also pointed out that one of the members of the Markush group is directed to inner esters but is also seen to include esters between two

hyaluronic acid chains. The Office is correct. The inner esters recited in claim 6 may also be esterified to other chains of hyaluronic acid.

Finally, claim 6 has also been amended by deleting two occurrences of the term “*cycloaliphatic*”, considered by the Examiner as redundant to cyclic in the definitions of hyaluronic acid esters and hyaluronic acid amides. The rejection of claim 6 may be withdrawn.

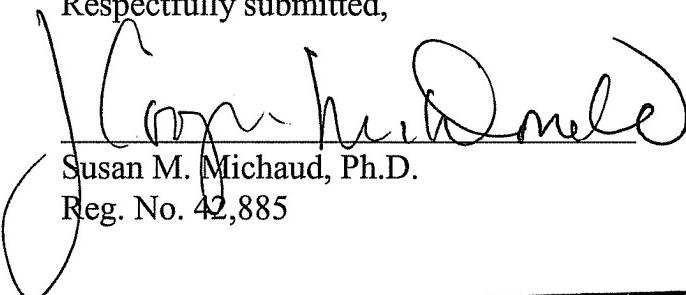
With respect to claim 43, the Office objects to recitation of an ester derivative dissolved in water or in an aqueous solution. The wording of claim 43 is due to the fact that the kit may include a solution of the ester derivatives in pure water or in water having other dissolved species, i.e., an aqueous solution. Thus, while the Office is correct that dissolving an ester derivative in water will yield an aqueous solution, the aqueous solution recited in the claim must include species other than water. This basis of the rejection may also be withdrawn.

CONCLUSION

Applicants submit that the claims are in condition for allowance, and such action is respectfully requested. If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

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Respectfully submitted,


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